

Central Banking

Before, During, and After the Crisis

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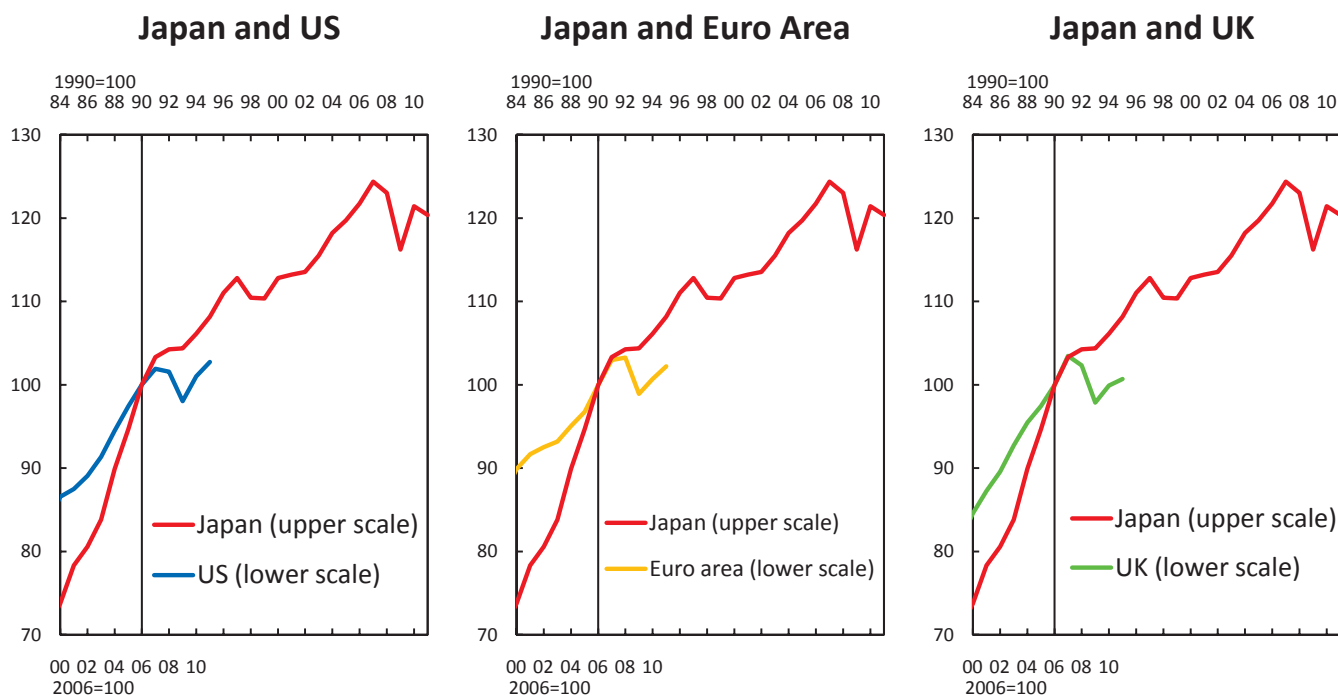
Introduction:
Some Recollections of Bubbles and Subsequent Crises

“Preventing Deflation: Lessons from Japan’s Experience in the 1990s”

..... our sense is that much of the failure of monetary loosening to support asset prices and to boost the economy owed to offsetting shocks rather than to a genuine breakdown of the monetary transmission mechanism. The “financial headwinds” associated with the collapse of asset prices probably did, to some extent, hinder the ability of monetary policy to boost activity. Even so, **there is little evidence that the transmission channels of monetary policy were so diminished as to have obviated the benefits of faster and sharper monetary easing in the 1991-95 period.**

Ahearne et al. (2002), FRB International Finance Discussion Papers, No. 729

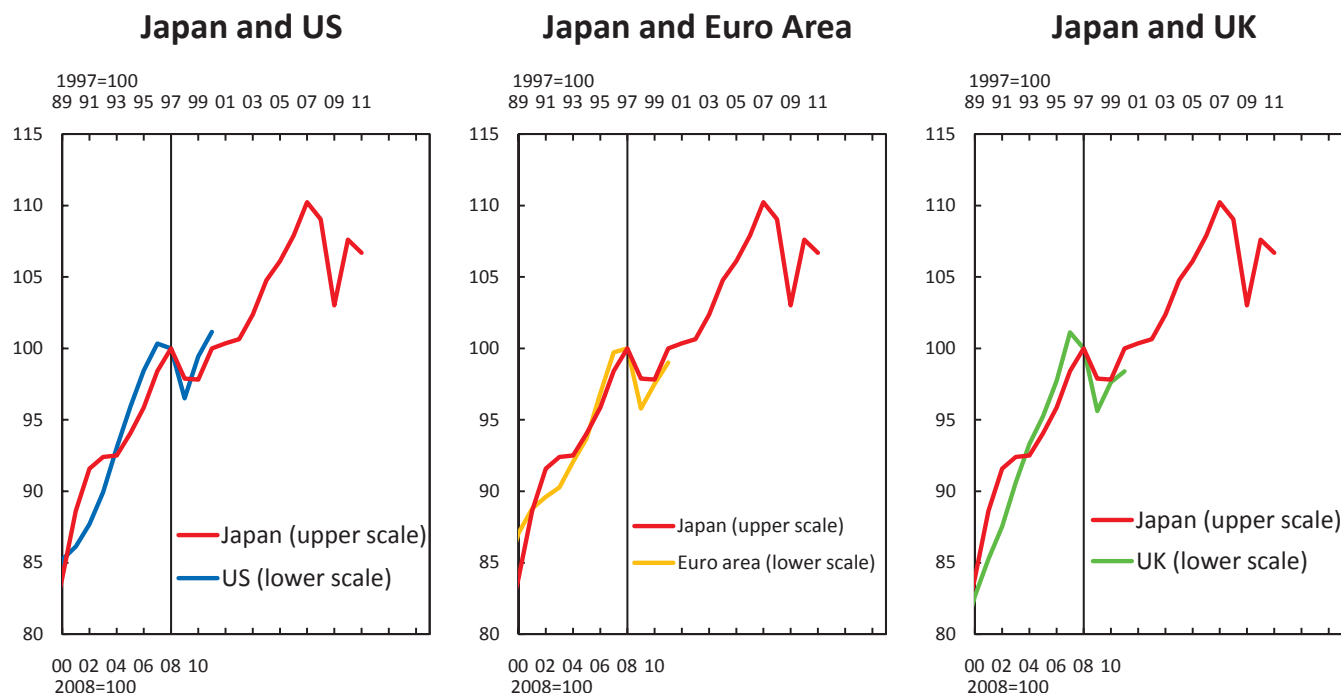
Developments in Real GDP after Real Estate Prices Peaked Japan: 1990-, United States: 2006-



Sources: BEA; Eurostat; ONS; Cabinet Office; Haver

Developments in Real GDP after Financial Crises

Japan: 1997-, United States: 2008-



Sources: BEA; Eurostat; ONS; Cabinet Office; Haver

Policy Measures in Japan and the United States

Date shows the period when each policy measure was initially introduced.

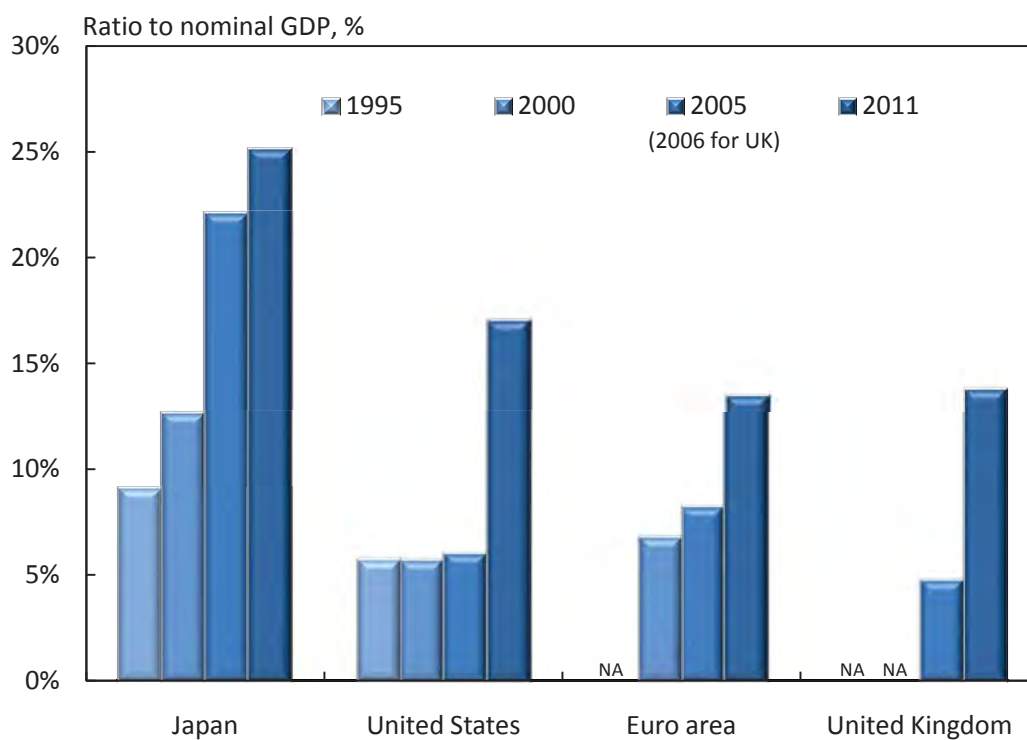
	BOJ	FRB
Extremely low interest rates	Feb. 1999 Introduction of ZIRP (In 1995, O/N rate declined to below 0.5%)	Dec. 2008 FF rate: 1% → 0-0.25%
Guidance about future interest rates	Apr. 1999 ZIRP commitment conditional on the state of economy	Aug. 2011 Improvement in transparency and predictability
Providing funds to wider range of counterparties	Feb. 2001 The bill purchasing operation conducted at all branches (providing longer-term funds to a wider range of counterparties including local financial institutions)	Dec. 2007 TAF (providing longer-term funds to a wider range of counterparties)
“Quantitative Easing”	Mar. 2001 Change in the operating target to the outstanding balance of the current accounts at the BOJ	Nov. 2010 Purchasing further longer-term Treasury securities ¹ (promoting a stronger pace of economic recovery and helping to ensure price stability)
“Credit Easing” Purchases of risk assets	Stocks held by financial institutions (Oct. 2002) ABS and ABCP (Jun. 2003) CP and corporate bonds (Dec. 2008) ETF and J-REIT (Oct. 2010)	AMLF (Sep. 2008, providing funds to MMMF) TALF (Nov. 2008, meeting the credit needs of households and small businesses) CPFF (Oct. 2008, providing funds to CP issuers) Agency bonds and Agency MBS (Nov. 2008, improving private credit market conditions)

Note 1 : Purchases of longer-term Treasury securities were first decided in Mar. 2009 to improve private credit market conditions.

(Abbreviation)

ZIRP: Zero Interest Rate Policy. TAF: Term Auction Facility. AMLF: ABCP Money Market Mutual Fund Liquidity Facility.
TALF: Term Asset-Backed Securities Loan Facility. CPFF: Commercial Paper Funding Facility.

Ratios of Monetary Base to Nominal GDP



Sources: BEA; FRB; Eurostat; ECB; ONS; BoE; Cabinet Office; Bank of Japan; Haver

Before the Crisis: Financial Imbalances and Monetary Policy

(Conventional Wisdom)

Triggers for changing monetary policy: Price developments

(During the Bubble Period)

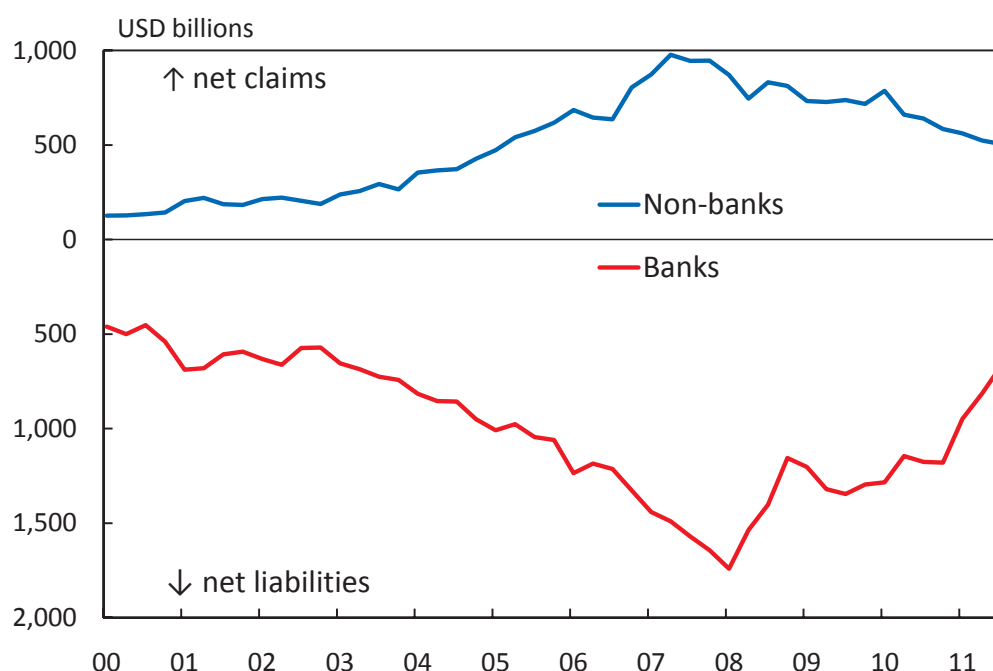
The most significant imbalance emerged on the financial front instead of the price front.

- Importance of ex-ante measures to address financial imbalances
- Policy assignments of price stability and financial system stability
- These two objects are not independent from each other

Growing Financial Imbalances

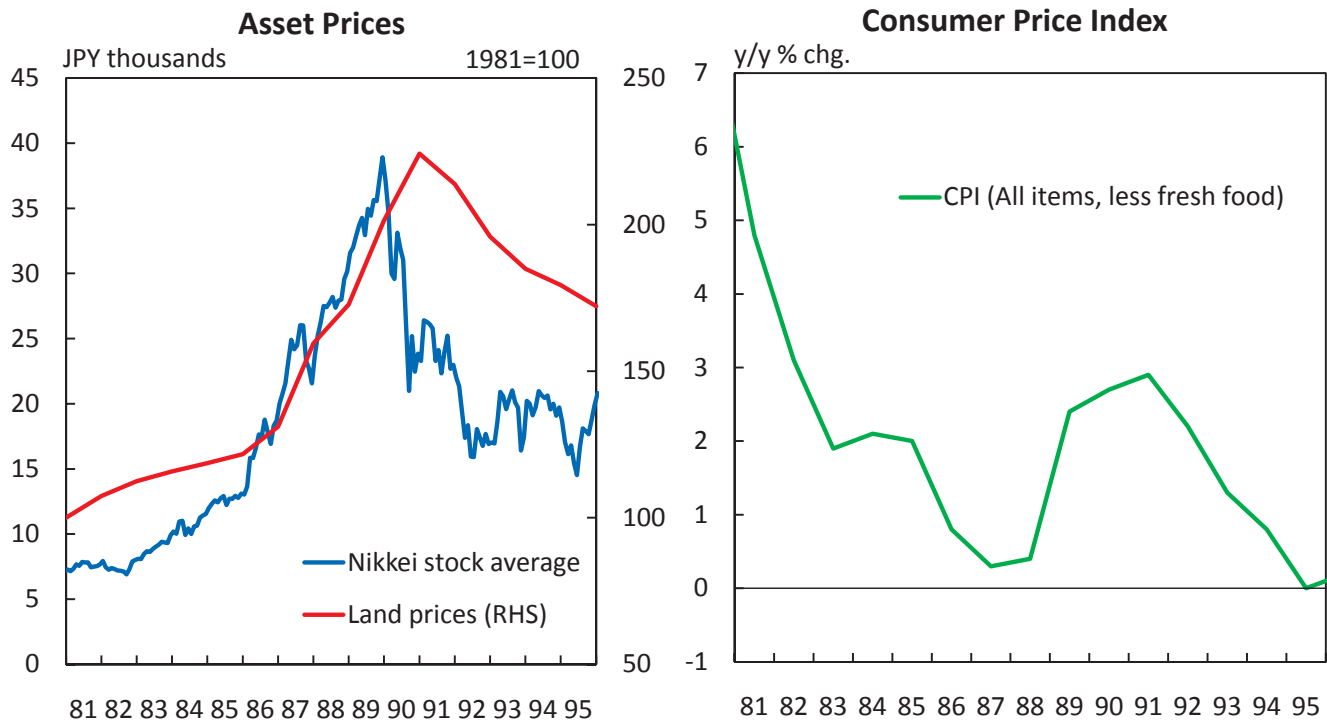
Increases in leveraging, maturity mismatch, and currency mismatch

Net US dollar-denominated foreign positions of European banks, by counterparty sector



Japan's Experience in the Bubble Period

During the buildup of financial imbalances, CPI inflation rates remained low, at 0.3 percent in 1987 and 0.4 percent in 1988



Sources: Nihon Keizai Shimbun (Nikkei); Ministry of Land, Infrastructure, Transport and Tourism; Ministry of Internal Affairs and Communications; Haver

Before the Crisis: Financial Imbalances and Monetary Policy

Central Bank's Commitment to Asymmetric Monetary Policy

(CB does not lean against a bubble so long as inflation rates are stable, but instead intervenes aggressively after the bursting of bubbles.)

- Put option-type monetary policy engenders more risk-taking.
- Price stability and continuation of low interest rates may encourage risk taking and amplify financial imbalances (paradox of price stability).

Policy Assignments of Price Stability and Financial System Stability

- Regarding financial imbalances, we need to employ appropriate monetary policy in tandem with regulations and supervision.

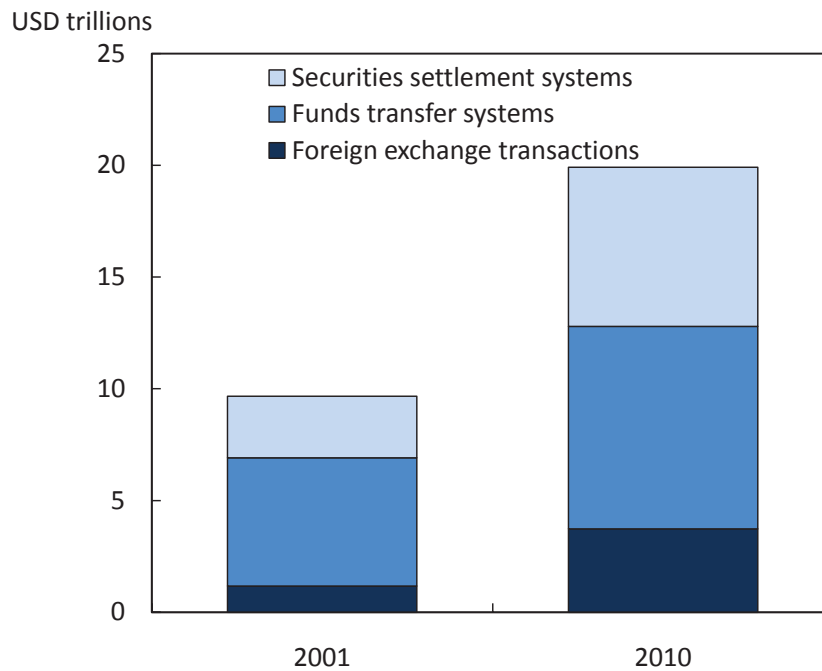
During the Crisis: The Importance of the Lender of Last Resort Role

During the Crisis: The Importance of the Lender of Last Resort Role

The Essential Role of a Central Bank During a Crisis Is “the Lender of Last Resort”

- The effectiveness of quantitative easing by the Bank of Japan, credit easing by the Federal Reserve, and LTRO by the ECB all hinge on these central banks' role as the lender of last resort.

Payment Value in Major Economies



Notes: 1. Average daily value.
 2. Figures for securities settlement and funds transfer systems are those of CPSS member economies as of 2001.
 3. Figures for foreign exchange transactions are those of economies covered by BIS Triennial Survey.
 Sources: BIS *Statistics on Payment, Clearing and Settlement Systems in the CPSS countries*;
 BIS *Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity*

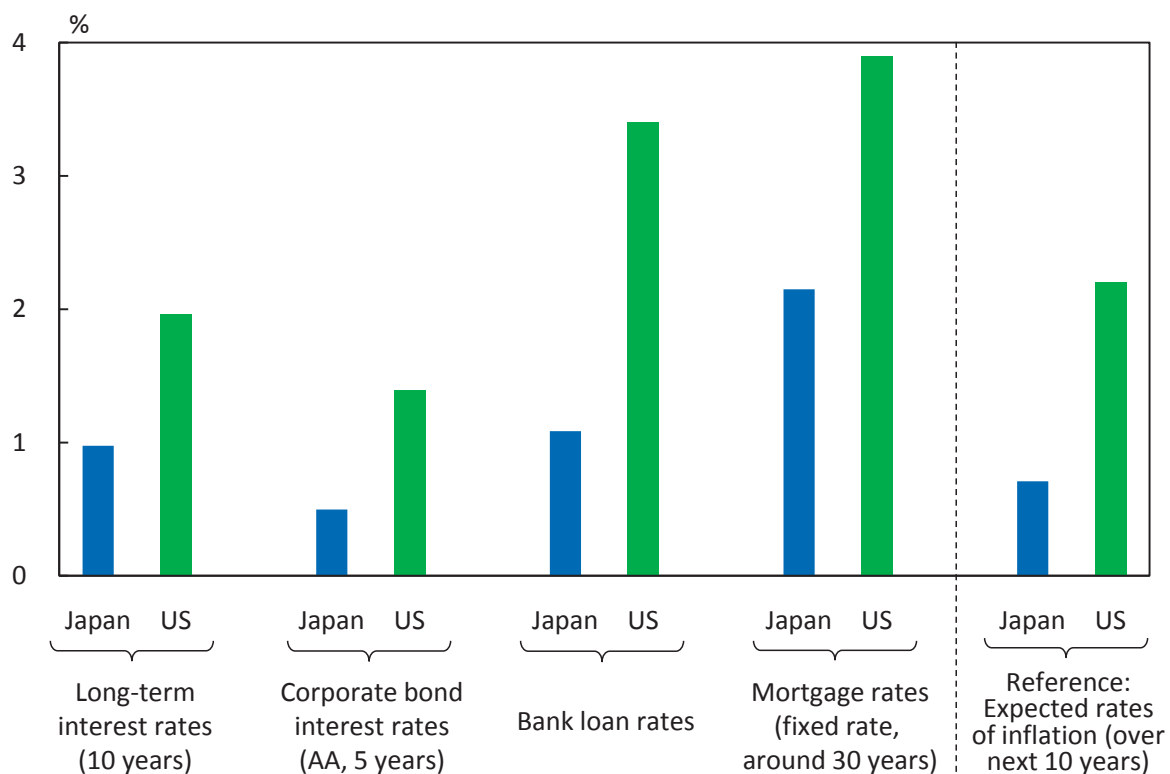
Developments to Improve Payment and Settlement Systems

	Developments in G10 countries
1970s - 1980s	Introduction of electronic networks in payment and settlement systems
1990s - early 2000s	Introduction of RTGS (Real Time Gross Settlement) in central bank payment systems
1990s - early 2000s	Introduction of DVP (Delivery vs. Payment) in major securities settlement systems
2002 onwards	Introduction of PVP (Payment vs. Payment) for the settlement of foreign exchange transactions through CLS (Continuous Linked Settlement)

After the Crisis: The Effects and Limits of Aggressive Monetary Policy

After the Crisis: The Effects and Limits of Aggressive Monetary Policy Chart 10

Financial Conditions in Japan and the United States



Notes: 1. Long-term interest rates, corporate bond interest rates, and mortgage rates are the averages of 2012/Q1.

2. Loan rates and expected rates of inflation are those of 2011/Q4.

Sources: Bloomberg; Japan Housing Finance Agency; Freddie Mac; Bank of Japan; FRB, Consensus Forecasts

- Aggressive monetary easing is definitely needed after the bursting of bubbles.
- Its side effects and limits should also be taken into consideration.

1. Burden of Balance-sheet Repair

The effect of easing on economic entities with excess debt

- Low interest rates mitigate the pain.
- However, low interest rates discourage incentives to lessen excess debt.

The effect of easing on economic entities without excess debt

- Economic entities bring forward future demand to the present.
- However, the amount of future demand to be brought forward gradually diminishes as balance-sheet adjustment continues over a protracted period of time.

2. Impacts on the Supply Side of the Economy

- Low interest rates may induce investment projects that are only profitable at such interest rate levels.
- A continuation of low interest rates could have an adverse impact on productivity and growth potential of the economy due to the inefficiency of resource allocation.

3. Impacts on Financial Intermediaries

- Maturity transformation through short-term funding and long-term investing is an important intermediation function of banks.
- Monetary easing widens spreads between short- and long-term interest rates, and enhances the stimulative effect on the economy through the banking sector.
- Beyond a certain threshold, however, further monetary easing could squeeze margins and have a negative impact on financial intermediaries.

4. International Spillovers of Monetary Easing and the Feedback Effect on a Country's Own Economy

- For individual central banks, the rise in international commodity prices is diagnosed as an exogenous supply shock.
- Do the optimal policies of individual banks with domestic-centric perspectives ensure the optimal policy of a “World Central Bank”? (Fallacy of Composition)

Policy Reaction Function of a Hypothetical “World Central Bank”

Taylor principle ($\alpha > 1$) does not hold.

$$\left(\begin{array}{c} \text{Global short - term} \\ \text{interest rate} \end{array} \right) = \alpha \times \left(\begin{array}{c} \text{Global headline} \\ \text{CPI inflation} \end{array} \right) + \beta \times \left(\begin{array}{c} \text{Global} \\ \text{output gap} \end{array} \right) + \gamma$$

Sample period	Estimated parameters	
	α	β
Jan.2000-Dec.2007 (before crisis)	0.90*	0.51*
Jan.2000-Dec.2010 (including crisis)	0.11	0.57*

Notes:1. * denotes statistical significance at the 1 percent level.

2. “Global short-term interest rate” is the weighted average of the interest rate in each country, with its corresponding GDP used as a weight. The global output gap is defined as the percentage difference between the global GDP and its HP-filtered trend. The data source of the global GDP is from the World Economic Outlook of the International Monetary Fund, while that of the global headline CPI is from the International Financial Statistics.

Concluding Remarks: Monetary Policy Challenges for the Future

1. The Framework of Monetary Policy

- Need to incorporate the macroprudential perspective into the conduct of monetary policy.
- However, it is much more nebulous than accountability for hitting or missing a certain inflation number.
- Macroprudential considerations will test the limits of democratic deference to the conduct of monetary policy.

2. Strengthening the Decision-making Process and Economic Analyses

- Real foundation of a central bank's independence.
- Need to break free from the habit of groupthink.
- Need to develop an institutional culture in which a variety of information about the macroeconomy, financial markets, and financial institutions is fully utilized in a well-balanced manner.